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The VIP receptor binding inhibitor VIP₂ (Leu-Met-Tyr-Pro-Thr-Tyr-Leu-Lys) (SEQ ID NO:1) has been shown in our previous studies to be a selective cytotoxic peptide for cancer cells having receptors for vasoactive intestinal peptide. Novel peptides that have conformational constraints and resist enzymatic degradation are formed by replacing any of the amino acids of the sequence Leu-Met-Tyr-Pro-Thr-Tyr-Leu-Lys with D_{xg}. D_{xg} represents cyclic and acyclic dialkylated glycines where the cyclic ring is a C₃-C₈ ring and the number of carbon atoms in the alkyl group is from 1 to 6 (methyl to hexyl). Examples are Aib, MeLeu (methyl leucine), Di-ethylglycine and its higher homologs, and 1-amino cycloalkane carboxylic acids. Aib represents α-amino-isobutyric acid.

In the Claims

Please cancel claims 5-31.

Please add the following claims:

SUB
G2 → 32. A method for treating ovarian cancer, lung cancer or leukemia comprising administering an effective amount of a peptide according to claim 2 to a patient in need thereof.

13 Sub G2 10 33. A method for treating breast cancer comprising administering an effective amount of a peptide selected from the group consisting of :

Aib-Met-Tyr-Pro-Thr-Tyr-Aib-Lys-OH (SEQ ID NO:2);
D-Leu-Met-Tyr-Pro-Thr-Tyr-Aib-Lys-OH (SEQ ID NO:3);
Leu-Met-Tyr-Pro-Thr-D-Tyr-Leu-Lys-OH (SEQ ID NO:4);
Leu-Met-Tyr-Pro-Thr-Tyr-D-Leu-Lys-OH (SEQ ID NO:5);
Leu-Met-D-Tyr-Pro-Thr-Tyr-D-Leu-Lys-OH (SEQ ID NO:6);
Aib-Met-Tyr-Pro-Thr-Tyr-D_{xg}-Lys-OH (SEQ ID NO:8); and
D-Leu-Met-Tyr-Pro-Thr-Tyr-D_{xg}-Lys-OH (SEQ ID NO:9).

Sub G2 12 34. A method for treating breast cancer comprising administering an effective amount of a peptide selected from the group consisting of:

Leu-Met-Tyr-Pro-Thr-D-Tyr-Leu-Lys-OH (SEQ ID NO:4); and
D-Leu-Met-Tyr-Pro-Thr-Tyr-Dxg-Lys-OH (SEQ ID NO:9).

35. A method for treating colon cancer comprising administering a peptide selected from the group consisting of :

Leu-Met-D-Tyr-Pro-Thr-Tyr-D-Leu-Lys-OH (SEQ ID NO:6);
D-Leu-Met-Tyr-Pro-Thr-Tyr-D-Leu-Lys-OH (SEQ ID NO:7);
Aib-Met-Tyr-Pro-Thr-Tyr-Dxg-Lys-OH (SEQ ID NO:8); and
D-Leu-Met-Tyr-Pro-Thr-Tyr-Dxg-Lys-OH (SEQ ID NO:9).

36. A method for treating prostate cancer comprising administering a peptide selected from the group consisting of:

D-Leu-Met-Tyr-Pro-Thr-Tyr-Aib-Lys-OH (SEQ ID NO:3);
Aib-Met-Tyr-Pro-Thr-Tyr-Dxg-Lys-OH (SEQ ID NO:8); and
D-Leu-Met-Tyr-Pro-Thr-Tyr-Dxg-Lys-OH (SEQ ID NO:9).